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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,623	12/27/2000	Satoshi Mori	MAEJ-136	3428
23290	7590	03/07/2005	EXAMINER	
HOLLANDER LAW FIRM, P.L.C. SUITE 305 10300 EATON PLACE FAIRFAX, VA 22030			ZIMMER, MARC S	
			ART UNIT	PAPER NUMBER
			1712	
DATE MAILED: 03/07/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/720,623

Applicant(s)

MORI ET AL.

Examiner

Marc S. Zimmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3,6,8,9 and 12-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 3,6,8,9 and 12-21 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 01/21/05.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

***Claim Objections***

Claims 19 and 21 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The ether product is not even formed until dicyclopentadiene and the phenolic compound are combined so the Examiner can't conceive of any other time that ether content would be measured.

***Claim Rejections - 35 USC § 112***

Claims 3, 6, 8-9, and 12-21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a process that provides an ether product-to total product mol ratio of 0.1 after the first step of the claimed process at a catalyst level of 0.255% by weight or lower, does not reasonably provide enablement for a process that provides an ether product-to total product mol ratio of 0.1 after the first step of the claimed process at a catalyst level of higher than 0.255% by weight. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

In illustrating to the Examiner that the stipulated mol fraction of ether by-product present at the end of the first stage of the process is not merely a function of the utilization of similar materials and similar reaction temperatures, Applicant points out that, whereas comparative Example 1 differs from Example 1 only in that a higher

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weight fraction of the boron trifluoride catalyst is employed, it nonetheless does not result in the formation of the ether product in the specified amounts at the end of the first stage. This is notable because claim 1 states that the catalyst may be used in quantities corresponding to up to 10 weight percent of the total weight of the composition and the amount of catalyst employed in comparative Example 1, at 0.99 wt. %, falls well within the range allowed yet fails to provide the minimum amount of ether product as set forth by the claim. In view of this discrepancy, it cannot be ascertained what balance of reaction parameters gives the desired result. For instance, what result should be expected if the practitioner were to use precisely the same amount of catalyst on a weight percent basis as is used in Example 1 but the amount of water present were different? What if a temperature different than that disclosed in Example 1 had been used? In view of Applicant's disclosure, there would appear to be considerable unpredictability so as to make identifying the proper conditions for obtaining the required mol ratio of ether by-product unduly burdensome.

In a broader description of his invention, Bogan recites the amount of acid catalyst incorporated into the polymerization system in terms of a mol ratio of catalyst to phenol compound with the low end being 0.002:1. In the example, the catalyst is made available in an amount equating to 0.003 mol/mol of phenol, which represents the low end of the broader range set forth in column 4, lines 33-36. Insofar as the mol ratio of ether-to-total product is apparently very sensitive to the amount of catalyst employed, it would appear that Bogan's process would not necessarily inherently provide the

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required molar ratio stipulated by the claims (including claim 20) as the amount of catalyst used is at least 56% higher than that in examples that epitomize Applicant's invention. Applicant is advised, however, that this reference may possibly be later combined with either Yoda et al., U.S. patent # 5,368,977 or Mori et al., WO00/35398 to render obvious the instant invention as both of the latter provide a motivation to minimize moisture content. (Whether or not this combination will be applied is contingent, of course, on Applicant's response to the issue raised *supra*.)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 4, 2005

*Marc Zimmer*

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